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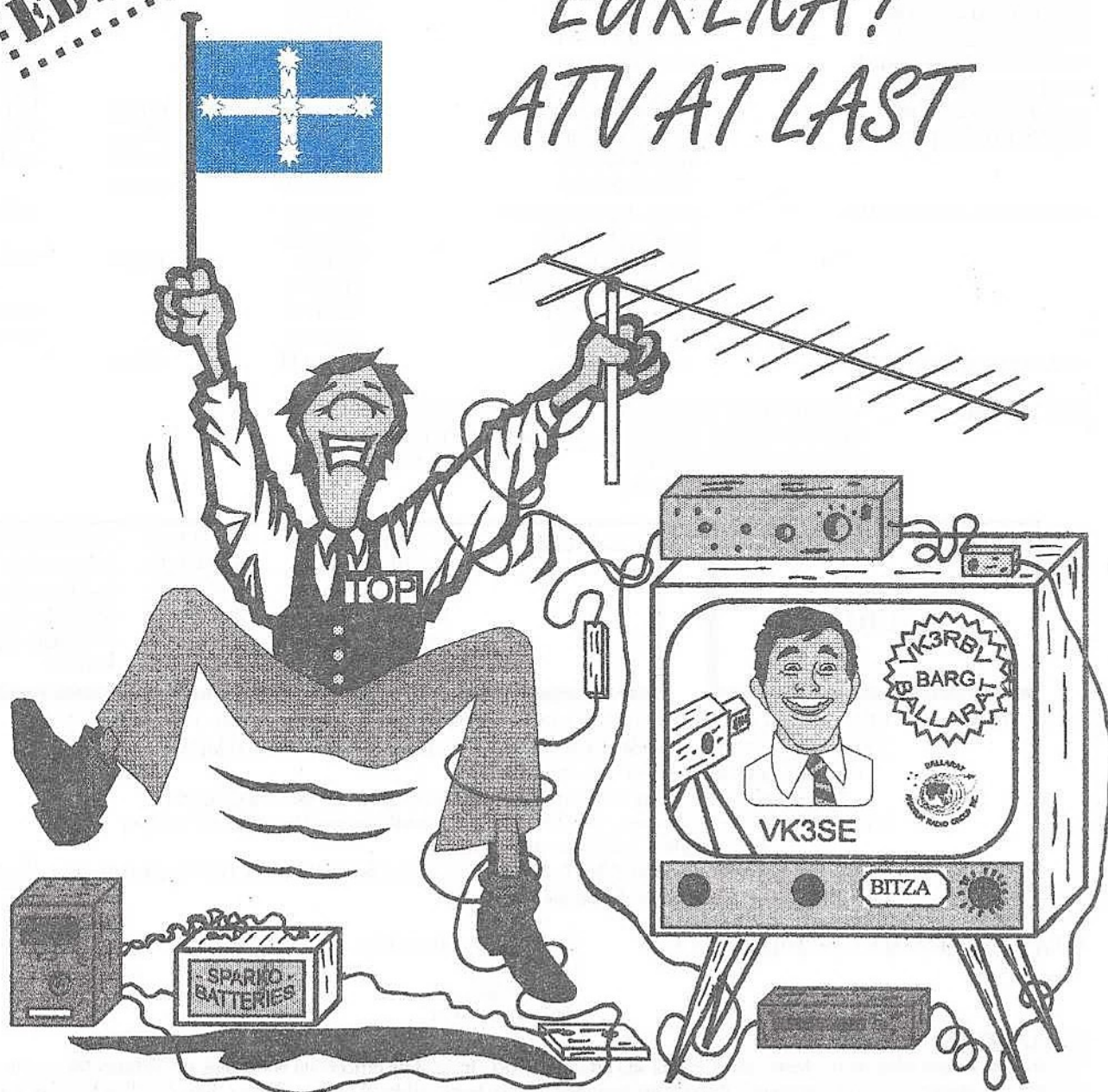
B.A.R.G. NEWS

APRIL 1995 VOL 18 NO 3.

NEWSLETTER OF THE BALLARAT AMATEUR RADIO GROUP INC.

**BUMPER
EDITION**

*EUREKA!
ATV AT LAST*





BALLARAT AMATEUR RADIO GROUP INC.

OFFICE BEARERS - 1994 / 1995

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	KEVIN HUGHES (VK3WN)	PHIL SEDDON (VK3AQM)		
	STAN WIDGERY (VK3SE)			

CLUB STATION

VK3 BML

REPEATERS

VK3RBA (Voice)	146.750 MHz. - Mt.Buninyong.
VK3RBS (Voice)	146.900 MHz. - Smeaton Hill
VK 3RPC (Packet)	144.750 MHz. - Mt.Warrenheip.
VK3RBU (Voice)	438.475 MHz. - Mt.Hollowback.
VK3RMB (Beacon)	432.535 MHz. - Mt.Buninyong.
VK3RBV (ATV)	426.250 MHz. - Ballarat

ACTIVITIES

CLUB NET: Thursday nights at 8 pm. (8.30 pm during Daylight Saving). Freq: 3.610 MHz +/- QRM.

2 METRE SCRAMBLE: Sunday Nights at 7.50 pm. Freq: 146.425 to 146.600 MHz. Inc,

Call back held on VK3RBA 146.750 MHz.

Logs monthly to D.Quirk - P.O. Box 78 - Newstead 3462 (or Meeting) to qualify.

MEETINGS: General Meeting : Last Friday of each month (except December) at 7.30 pm.

Natter Night : 2nd Friday of each month.

Venue: Ballarat Adult & Further Education Centre (BRACE) 602 Urquhart St. (Cnr. Windemere St.)

FOX HUNTING: As arranged during the year.

PLEASE ADDRESS ALL CORRESPONDENCE to:

The Secretary - BARG Inc.

Box 1261

Mail Centre

Ballarat 3354

DISCLAIMER

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The Minutes

MINUTES OF BARG MEETING HELD 31ST.MARCH 1995



President Bob VK3BNC welcomed members and guests to the inaugural meeting at the new venue.

APOLOGIES were accepted on behalf of the following VK3's:

NIZ, XEX, AAP, FRO, YMW, TOP, XAH, KIT, PDG, AEX, VU, - MAX.

AAI/LBA

MINUTES as presented in the Newsletter were confirmed.

DOK/DMK

BUSINESS ARISING The Generator has been serviced and is now fully operational.

Thanks to Cliff VK3CCB.

TREASURERS REPORT:

Accounts for Payment - N.D'Angri (Newsletter Postage & Labels) \$76.85

John Graham (Newsletter printing.)	\$30.00
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OSL Manager.	\$ 8.85
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CAZ/FMC

REPORTS: Non-submission of reports from some areas, for publication in Newsletter is very disappointing

A bit poor fellas!.

QSL Report - 162 cards in - 80 cards out. **TNKS Doug.**

TNKS Doug.

NEWSLETTER - Production deadline met again - TNKS Norm & staff.

CLUB NET - Logs to be held in archives as an historical reference.

Proposed new format to be investigated & implemented. TNKS Cliff.

TNKS Cliff.

PROPERTY - Pre-plan borrowings for May as Jeff will be away !

GENERAL BUSINESS

- ◆ Club project to be implemented for Practical Nights. AXH and DOK to form "Project Group" and present proposals. FGC/CFH
- ◆ WICEN training nights on Wednesday prior to Meetings at SES HQ - Gillies St.Sth.
- ◆ RG213 Co-ax cable. Mil.Specs - Check with AXH - Maybe buy a roll at good price.
- ◆ 3CR Community Radio - Mast for sale - 30Metre.
- ◆ Report on VK3RWZ crisis. To be investigated !
- ◆ Invitation to G.A.R.C. to 'Junk Nite' on May 26th.
- ◆ ATV - Glowing reports on ATV reception. Call sign allocated - VK3RBV. We're looking forward to some good graphics. TNKS Ben & Stan.

MEETING BREAK at 8.35pm for Coffee & Chat.

RESUMED AT 8.50pm.

Introduction of Tom VK3DMK who presented members with an informed address and demonstration of "Wind Generators". Many thanks to Tom - Great Stuff!!!

MEETING CLOSED at 11.15pm. A top night.

Next Meeting - Friday 28th April

<<<<<<<<<◇>>>>>>>>>>

FOR SALE

386SX LAPTOP COMPUTER

1 MB RAM - 40 MB HD DRIVE

\$600

Contact Ben VK3TOP (053-203601 B/H)

FOR SALE

YAESU FT470 HAND HELD - 2M & 70cm - DTMF

\$350.00

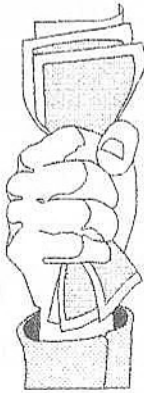
BEAM - 5 ELEMENT TRAPLESS - NEW IN WRAPS

\$450.00

Contact Stan VK3SE - 053-322340

Bob - VK3BNC





FOR SALE

**YAESU FT75B - HF TRANSCEIVER
WITH AC SUPPLY & DC SUPPLY**

**FOR FURTHER DETAILS AND A GOOD PRICE
CONTACT DAVID VK3YNB.**



FOR SALE

**KENWOOD TS 820S
100 WATT HF TRANSCEIVER
WITH DIGITAL DISPLAY.
COMPLETE WITH MC50 DESKTOP MICROPHONE.**

**GOOD VALUE AT JUST \$650.00
CONTACT IAN VK3FD - ☎053-358031 (A/H)**

FOR SALE

**PHILIPS 828 - SUITABLE FOR PACKET.
C/W CIRCUIT & MIC. \$45.00
ST CLARK VK3ASC - SPIDER QUAD HUBS \$40.00
ASTATIC - D104 MICROPHONE \$40.00**

CONTACT - LYNDON VK3LSM.



VK3RBV - ATV REPEATER AN INTRODUCTION BY BEN VK3TOP.

A GUIDE TO OPERATION:

- ♦ The control and liason frequency is 147.400 MHz.
- ♦ The repeater is controlled by DTMF tones. (If your rig doesn't have them, purchase a tone pad from Dick Smith.)
- ♦ Tone 1 - will cause a B/W camera to come up.
- ♦ Tone 2 - will cause colour bars to come up.
- ♦ Tone 3 - will cause a colour camera looking at the repeater to come up. Note: this camera has a tube saver and therefore takes about 30 seconds to come up.
- ♦ Tone * - the 'star' tone will turn the repeater off. Note: You must turn the repeater off between the selection of inputs, otherwise each input will 'mix' with the last selected, causing strange results.
- ♦ At the moment there is no 'time out', so make sure that you turn the device off (using the * star button) after you have finished.
- ♦ The output is on 426.250 MHz running 10W vertically polarised. This works out to be about channel 18 so go as low as you can. Try every UHF device you have (TV & Video). If you don't do any good you will have to make a 'down converter' - i.e. 426 MHz to channel 5. Stay tuned to the Newsletter for details on how to do this.

95/04 6

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LIFETIME GUARANTEE ON MOTOR
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1 Litre Makes 100 Litres

73 de Bill VK3PH



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OR CONTACT
BALLARAT AGENT
IAN LEISHMAN
018 503682



It didn't happen overnight! But it HAS happened.

BEN - VK3TOP DESCRIBES THE PROJECT

Well it's been a long long time coming, but finally Ballarat has it's own Amateur T.V. Repeater. !!!!

Before I launch into what it is all about, I must give credit to Stan VK3SE for the vision (pun intended) and the perserverance to make it all happen.

If you, the reader, and the typing of the editor can stand it, I will write a full story on the history of the ATV repeater for publication at a later date. But for now : what is it, where is it, and what is in store for it ?

The ATV repeater will accept 1249.50 MHz FM vision and re-transmit it out on 426.250 MHz as AM vision. What's your problem ? You don't have a 23cm. ATV transmitter ? Well, no matter, Novices can also have fun with ATV. We also have a receiver tuned to 147.400 MHz. that is coupled to a DTMF decoder. This allows anyone with a 2 metre rig and DTMF to key up the output of the ATV repeater !

(I know that 147.400 is a bad frequency for many of you who suffer pager interference. I am not sold on this frequency as it desenses the repeater from time to time, so if we can find another spot that fits the band plan I am happy to try it.) The DTMF decoder has 3 switched outputs (at the moment) that will bring up 3 different inputs as you select them. The procedure for this operation is described elsewhere in this edition of the Newsletter.

The output of the repeater runs into a vertical co-linear antenna mounted on a pole atop the Engineering Dept. at the Queen Elizabeth Centre. The 2 metre control antenna is a 5/8 vertical, but it's not very high, so hit it hard if you can (i.e. beat the pagers - hi! hi!.)

We intend to run more power (40-50W) either vertical or horizontal (we can't decide) from the roof of the Q.E. itself and we will have more inputs to select from.

Now, here's the nitty-gritty if you're interested.

The 1296 receiver was my commercial AUSAT receiver with the RX antenna (a 4 element beam) plugged straight into where the LNA normally plugs in. No pre-amp was needed which helped, but we will run one eventually. You may have noticed I said the receiver WAS mine - I took it back to play satellites at home again - but not wanting to leave the repeater blind to Stan, I've started making up

another 'hot' satellite receiver. I hope that the tuner in this one is as hot as my old one. The 1296 receiver is located 4 stories up on the roof. It's output is fed into a video line driver (2 X BD140's) which feeds into about 280 metres of RG58 with 2 joins. This ends up in the Engineering Department where we have another video amp.

The 147.400 receiver is the Dick Smith UHF monitor kit with a BFR91 pre-amp. The recovered audio is fed into a MC145436 DTMF decoder chip. This outputs BCD for each received (and valid) DTMF tone which it feeds into a 4514 16 way decoder chip. Only the first 4 outputs are used at the moment, these drive a 4043 quad. resetable latch. Each output then drives a BC337 which switches a 12 volt relay. The relay switches power on to the 426.250 ATV transmitter and switches video into the TX input. This way the transmitter is off until someone calls it up. The audio for the transmission is supplied in my harmonious voice by a digital voice recorder chip that runs all the time when the ATV transmitter is keyed up. We did have automatic key-up for the 1296 but the sync detect circuit is not reliable, so it has been done away with and the 1296 is selected via DTMF (at the moment).

The 426 MHz transmitter is the old 'Electronics Australia' monthly project. We spent a while de-bugging it and it now outputs a clean 3 watts with sound. It drives into a URF653 linear built by Stan which gives us 10 Watts. We have a 25C2783 nearly ready to fly, which we hope will give us close to 40Watts.

The 10 Watts makes its way up about 35 metres of RG213 and into the vertical on the mast.

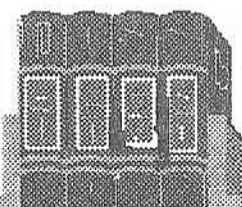
So there you have it. That is the current set up and certainly not its final. We've got lots of ideas where we want the project to end up, but your thoughts, comments and signal reports will all be noted.

Have fun, and we'll see you on ATV.-VK3RVB



WELL DONE

BEN and STAN



The B.A.R.G. Bookshelf



The following is a catalogue of books held in the BARG Library
as compiled by our Librarian - Richard VK3JFL

1000 Questions for Novice Candidates - 3 Copies

1979 DX Listing Call Book.

500 Questions for AOCPC Candidates - 5 Copies.

80 Metre DXing.

Amateur Radio - Novice Study Guide.

Amateur Radio - Technical Abstracts.

Amateur Radio - Vol 1.

Amateur Radio - Vol 2.

Amateur Radio - Vol 3.

ARRL Electronic Handbook.

ARRL Handbook for Amateurs. 1974

ARRL Handbook for Amateurs. 1983.

ARRL Handbook for Amateurs. 1986.

ARRL Handbook for Amateurs. 1988.

Basic Electronics.

Basic Radio Training Manual.

Build your own Test Equipment.

Creative Circuit Design.

Data Communications Handbook.

Digital Electronics revealed.

Electron Colour Tubes.

Electronic Notebook - Vol 1. (2 copies)

Electronic Notebook - Vol 2.

Electronics - Stage 1.

Fairchild I.C. Data - Vol 1.

Fairchild I.C. Data - Vol 2.

FET Manual

Guide to Amateur Radio.

Handbook for operation of Amateur Stations (2 Copies)

Handbook for Wireless Operators 1952.

Ham Cram Exam Book - (4 copies)

HF Antennas for all locations.

Hints and Kinks for the Radio Amateur.

How to be a Ham.

Into Electronics.

Learning the Radio Telegraph code.

Low Band DXing

Marconi School of Wireless.

Mastering the Morse Code.

Maths for Electronic Students.

Modern Radio Servicing - 1935.

Novice Antenna Notebook.

Novice Electronics.

Packet Radio Primer.

Philips 'Preferred Type' range Catalogue.

Philips Radio Amateur Handbook.

Practical Wire Antennas.

Q & A's for the Novice Candidate. (2 Copies).

QRP Classics.

QRP Circuit Handbook.

Radio Communications - Book 1.

Radio Communications Handbook.

Radio Engineering Handbook - 3rd. Edition.

Radio Handbook 1963.

Radio Servicing.

Radio Valve & Teletube Manual Vol. 5.

Rola Loudspeaker Data.

Satellite Anthology

Satellite Experimenters Handbook.

Single Sideband for Radio Amateurs.

Solid State Design for Radio Amateurs.

Swainston Radio Theory Handbook - (10 copies). *

Television Engineering Pocket Handbook.

Television Engineering.

Test Equipment for the Radio Amateur. - (2 Copies).

The Elementary Radio Course.

The Novice Operators Theory Handbook - (2 copies).

Transistor Manual 1983

Transistor Manual - 1984

Transistor Substitute Manual - 1983.

UHF Condinium

UHF VHF Manual

Understanding Amateur Radio,

Valve Data Handbook Vol 1.

Valve Data Handbook Vol 2.

Valve Data Handbook Vol 3.

Wire Antennas.

Yaesu FT101 Series Maint. Manual.

For more information on magazines etc. or the
borrowing of books, contact Richard VK3JFL.

FOR SALE

CW PADDLE & MFJ 'ECONO KEYS'

A GIFT AT \$120 THE PAIR.

RICHARD - VK3JFL

THEY SAY THAT

Hard work never hurt anybody, but why risk it !

Gun Control is hitting what you aim at.

I used to have an open mind - but my brains fell out.

Everyone is entitled to my opinion.

A good organiser, is one who is careful to plan well ahe

Crime wouldn't pay if the Government ran it !

REPORTS

(OR WHAT'S GOING ON !)



ATV REPORT - See pages 5 & 7.

PRESIDENT'S REPORT - See page 4.

LIBRARIAN'S REPORT - See Page 8.

NEWSLETTER REPORT

My thanks to those members who have made contributions to the Newsletter content over the last couple of months. I'm sure that you must realise how much easier it makes the editing job if there is advance material available.

To those who haven't provided any articles, I ask you to have a think about projects or incidents which you have been involved in and 'please consider' if they would be of interest to other club members.

This month Jim (VK3ANH) has provided us with a great story of his radio career which must bring back memories to a lot of members, but would also inform younger members of happenings in earlier times. If you've got a story to tell then please send it to me, no need for typing, and it can be published (if applicable it will also be passed on to our Historian for filing).

Thanks also to people who have notified me of changed or incorrect mailing details.

Norm VK3LBA.

EDUCATION

The Novice classes are progressing well with 4 people attending. Should anyone be interested in the UPGRADE CLASS which will be commencing in July/August could they please notify me ASAP

Tom VK3DMK

PROPERTY

Should you have a need to use or borrow items from the BARG property store during May, could you please contact me ASAP to make arrangements, as access to equipment will be unavailable during that month.

Jeff - VK3PAP.

PACKET

Change of Callsign.

Packet users are informed that the local BBS has had a change of Callsign. VK3IBM is now VK3FBB. Make sure to change your BBS to VK3FBB. Command "NH" then enter your own callsign VK3***.

Tom - VK3DMK

QSL CARDS.

As indicated previously, it is my intention to set up a 'photo file' of local Amateurs as a historical project, and to display at BARG functions. To compile this file I am requesting that you may like to supply me with a photograph of yourself at your rig, together with your QSL card. These will be laminated and suitably mounted for display. I am sure that you will agree that such a file would in time become a valuable historical asset to BARG. I look forward to receiving your card and photo.

Thanks.

Doug - VK3VBA

NO FURTHER REPORTS !!!



BARG MEETING

28th. APRIL



**XTAL SET COMPETITION
JUDGING**

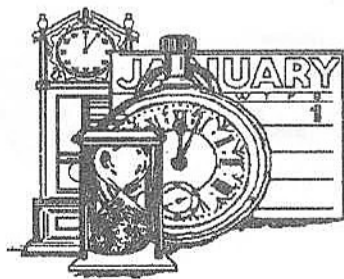
Following the Meeting.
Don't forget YOUR entry.



Every Ham appreciates



**A
GOOD
FRONT
TO
BACK
RATIO**



How Old Timers Got That Way

From JIM VK3ANH

One night last year I was on the Club Net. So also was Brian VK3KQB. I happened to mention that, although both Brian and myself had been 'Hams' living in Ballarat for the last 40 years, this was the first time we had spoken to each other 'on air'. Some of the *youngsters* like Cliff expressed incredulity at this. Let me explain.

I was in year 6 Primary School when our Headmaster led a bunch of us through the construction of crystal sets. A couple of us went on to build 2 valve sets. I was hooked! I packed away my Meccano and my ambitions to be a great bridge builder. RADIO WAS IN!

Early in 1939 a new magazine appeared in the Newsagents. It was 'Radio & Hobbies' and the Technical Editor was John Moyle VK2JU. One of the early issues had an article entitled "Your First Transmitter". Transmitter ???

Transmitter !!!

Oh Man! I wanted my first transmitter.

Before I could start scrounging parts or saving cash, a man on the other side of the world took the step which put the world's Hams off the air for the next 5 years.

The Boy Scouts instructed me in 'Air Raid Precautions' and taught me to send Morse by flags. I made a morse key and tone oscillator and practised with a student living next door. It wasn't until 1944 that I got my hands on some transmitters. Not mine, they belonged to King George. Some of them only transmitted

Radar, and on radio the QSO's were strictly limited to Air Force Regs. After the war I decided to stay with the Air Force for a while. After seeing most of Australia and a little of Japan and Korea, I found myself on the staff of the RAAF Radio School in Ballarat. Brian was also there. Quite a few of us wanted to become 'Hams' and Air Force Regs. provided for Ham stations on RAAF bases - subject to the C.O.'s approval.

Catch 22 - Our signals might foul up military traffic, our antennas might rake a 'plane out of the sky, or fall on a hapless airman. It was never said, nor was it even thought of (was it ?) that in the grip of his addiction a Ham might convert some of Her Majesty's equipment to his own use.

We eventually found a way. The plan was to trap a YL and convert her to XYL.

This would allow us to achieve the status of *-Personnel - Married - Living Out*. This allowed us to rent a flat, house or rooms, which would become a Ham Shack complete with living quarters. At 7.45am on weekday mornings a stream of *Married Living Out* could be seen racing along Learmonth Rd. to make the 0800 hrs. parade.

There was always some smart guy who thought his pre-war beatup old bomb of a car was better than yours so as he swept past you signalled your contempt by sounding your horn to the tune of *dah dah dit, diddy dah dit*. and he would respond with *diddy dah, diddy dah dah dah*. Oh, there were some great comedians in those days.

Having got your shack, the next move was to equip it.

'Tricky Dicky' had not been born,

and those who would later become 'ICOM' were busy re-building Japan. There were some communications receivers about if you had the price. We didn't, and even in W-land there were no Ham transmitters, you either built from scratch or converted ex-military gear.

Your first decision was HF / VHF ? I chose HF and Brian went for VHF. "Why" said Cliff "didn't you have both".

One - Cash. Two - having built it you wanted to spend your 'on air' time comparing your design with the other guy's. Your 'off air' time went in trying to squeeze an extra couple of Watts out of it. Three - ideology.

The VHF gang reckoned HF was only one step up from DC and all there was to know had been discovered. (we hadn't thought of SSB). The HF boys raved about DX and became hysterical about VHF QSO's over 2 city blocks and the ops meeting at morning smoko next day to swap cards. Seldom did the twain meet.

Two things changed this. One was the VHF boys forming repeater groups. The HF ops pricked up their ears. VHF might be of some use after all, and didn't take so much space in your car. Later the groups became Clubs and an inrush of Novices out-numbered the Full and Limited calls, and the VHF boys found themselves out of things unless they had 80 metres.

By this time Brian and I were both busy developing our respective careers and raising our offspring. We had less time 'on air', and so it was not until one day last year we found ourselves on the same band at the same time.

73 de Jim VK3ANH

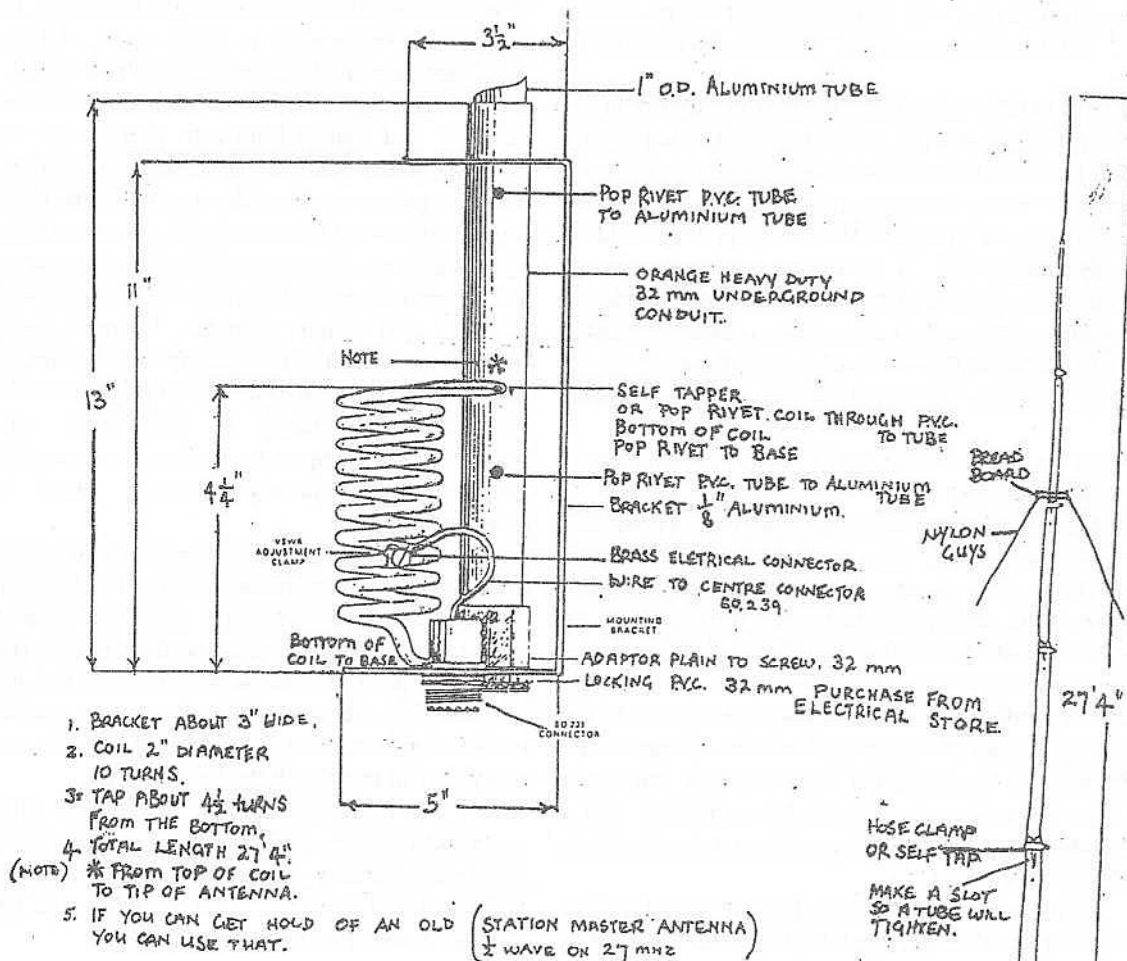
BOOK REVIEW: I refer readers to "NO HERO" a paper back by John Kingsmill, published by Hale & Iremonger. - Memoirs of a graduate of the Ballarat Radio School and his experiences both here & in New Guinea. A good read. (ED.)

A great contribution to the
Clip Board
from David VK3MJJ

Have you got a small
project that could feature
on the Clip Board?

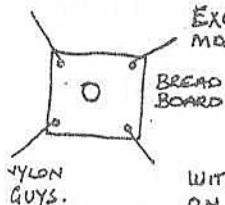


$\frac{5}{8}$ VERTICAL FOR 21 MHZ

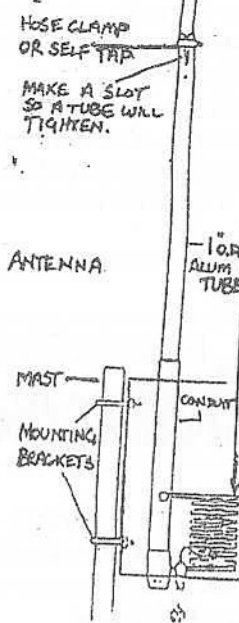


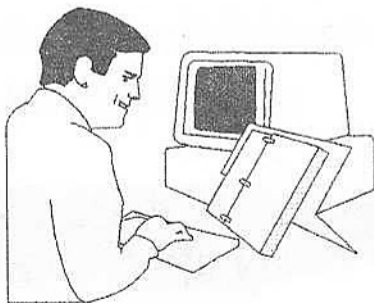
NORM. THOUGHT YOU MAY BE ABLE TO USE THIS ANTENNA
THE RESULTS AND REPORTS I HAVE HAD
USING THIS ANTENNA HAVE BEEN
EXCELLENT. ALSO BECAUSE OF THE HEIGHT YOU
MAY NEED TO GUY THE ANTENNA WITH SOME NYLON
CORD.

73 VK3MJJ
DAVID BENNETT.



WITH TUNED RADIALS IT WORKS WELL
ON 40 METERS ALSO.





PACKET RADIO

An Introduction



PACKET RADIO: An Introduction - - by Larry Kenney, WB9LOZ

Packet Radio is the latest major development to hit the world of Amateur Radio. If you haven't already been caught by the "packet bug", you're probably wondering what it's all about and why so many people are so excited about it. Well, continue reading, because you're about to find out.

Packet seems to offer something different from other facets of Amateur Radio, yet it can be used for everything from a local QSO to a DX contact 2500 miles away (on 2 meters!), for electronic mail, message transmission, emergency communications, or just plain tinkering in the world of digital communications. It presents a new challenge for those tired of the QRM on the low bands, a new mode for those already on FM, and a better, faster means of message handling for those on RTTY. Packet is for the rag chewer, the traffic handler, the experimenter, and the casual operator.

A ham can get involved very easily with relatively small out-of-pocket expenses.

All you need is a 2-meter transceiver, a computer or terminal, and a TNC. You probably already have the two meter rig and a computer of some kind, so all you need to buy is the TNC, which costs just over \$100. The TNC is the Terminal Node Controller, the little black box that's wired between the computer and the radio. It acts very much like a modem when connecting a computer to the phone lines. It converts the data from the computer into AFSK tones for transmission and changes the tones received by the radio into data for the computer. It's a simple matter of wiring up a plug and a couple of jacks to become fully operational.

Packet is communications between people either direct or indirect. You can work keyboard to keyboard or use electronic mailboxes or bulletin board systems to leave messages. Due to the error checking by the TNC, all of it

is error free, too. (That is, as error free as the person at the keyboard types it.) As the data is received it's continuously checked for errors, and it isn't accepted unless it's correct. You don't miss the information if it has errors, however, because the information is resent again. I'll go into how this is accomplished in a later part of this series.

The data that is to be transmitted is collected in the TNC and sent as bursts, or packets, of information; hence the name. Each packet has the callsign or address of who it's going to, who it's coming from and the route between the two stations included, along with the data and error checking. Since up to 256 characters can be included in each packet, more than three lines of text can be sent in a matter of a couple seconds. There is plenty of time between packets for many stations to be using the same frequency at the same time, and all using the same repeater. The repeaters, known as digipeaters, are simplex operations and occupy a single frequency, as opposed to the common two-frequency repeaters used for voice communications.

You can link from digipeater to digipeater, too, extending your range tremendously. I've worked twelve states on 2-meters with packet, all with a ten watt rig, thanks to this linking capability. If all of this sounds confusing, don't let it bother you, because that little black box, the TNC, does everything for you automatically. Packet might seem very confusing at first, but in a day or two you're in there with the best of them.

In future parts of this series, I'll be telling you more about packet--how you get on the air, how to use it to your best advantage, and ways to improve your operation. We'll even talk about that little black box, the TNC, and tell you about all its inner-most secrets.

More next month. TNX to Murray VK3AAI

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PACKET RADIO CHANGE OF CALLSIGN

PACKET USERS

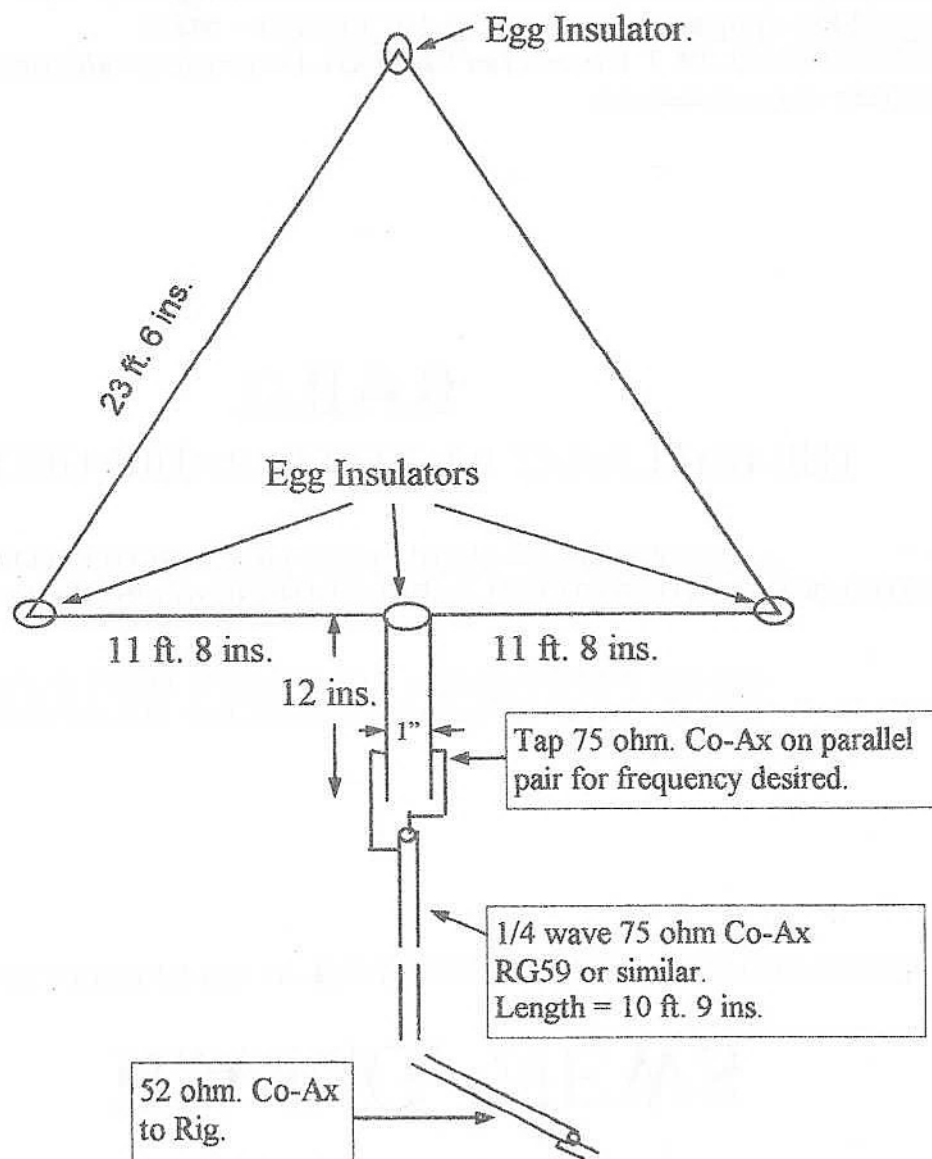
The local BBS has had a callsign change.
VK3IBM is now VK3FBB
Don't forget to change your BBS to VK3FBB
Command "NH"
then enter your callsign VK3 ***

Wire Antenna for 14MHz.

From STAN VK3SE



Try this for 14 MHz - SWR 1:1 on frequency.
Adapt to other frequencies by using formula: $L \text{ (Sides)} = \frac{334}{\text{Freq. in MHz.}}$



- ◇ FER SELL - CHEEP - IBM spel chekker. Wurks grate !!
- ◇ Hard work never killed anyone - but why risk it ?
- ◇ What do they mean ACCOUNT OVERDRAWN ??? I've still got some cheques left !!!!
- ◇ Resistance is useless ! - if less than 1 Ω
- ◇ Psychoceramics - The study of crackpots.

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COMING EVENTS AND INFORMATION

26th. April WICEN Training Night.
28th. April BARG General Meeting. - XTAL SET Competition
29th. April 1995 WIA Foxhunting Championships. - Yarra Glen.
12th. May Natter Night
13th. May Moorabbin & District Hamfest '95.
17th. May BARG Committee Meeting
20th. May. Sunraysia R.G. Radio & Craft Exhibition - Mildura.
24th. May WICEN Training Night
26th. May BARG General Meeting - JUNK AUCTION NIGHT.
17/18th June VK Novice Contest.
Monday Nights - Practical Nights.



BARG property for use or hire will not be available during May. If you are contemplating use of BARG equipment please contact Jeff VK3PAP - NOW.
NEED SOME CO-AX ? Contact Ian VK3AXH. If demand is sufficient a full reel may be purchased at a reduced cost.

B.A.R.G.

THE BALLARAT AMATEUR RADIO GROUP INC.

A GROUP OF RADIO ENTHUSIASTS LICENSED TO EXPERIMENT
WITH LOCAL & INTERNATIONAL RADIO COMMUNICATIONS ON AN AMATEUR BASIS.

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B.A.R.G. NEWS



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